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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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BURR & BROWN PO BOX 7068 SYRACUSE, NY 13261-7068			EXAMINER DUFFIELD, JEREMY S	
			ART UNIT 2623	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/629,510	Applicant(s) MARLAND, DALE W.	
	Examiner JEREMY DUFFIELD	Art Unit 2623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nicholson (US 5,697,047) in view of Groenewegen (US 4,532,543).

Regarding claim 1, Nicholson teaches an apparatus for combining a plurality of CATV channel signals at the head end of a CATV distribution system, i.e. head-end includes combiners to combine a plurality of the television channel signals (Col. 6, lines 25-49), comprising:

a first plurality of band-pass filters each having an input for receiving a separate, predetermined group of channel signals, (Fig. 2, el. 87, 91), and an output (Col. 6, lines 25-39),

a second plurality of band-pass filters each having an input for receiving a separate, predetermined group of channel signals, (Fig. 2, el. 87, 91), and an output (Col. 6, lines 25-39),

a combiner for combining the channel signals from said first plurality of band-pass filters with the channel signals from said second plurality of band-pass filters, i.e. combining the C channel group from SCC-1 with the B channel group from SCC-2 (Fig. 2, el. 93; Col. 6, lines 45-49).

Nicholson does not clearly teach a plurality of band-pass filters each having an input for receiving separate, predetermined channel signals, and having each output of the plurality of band-pass filters directly connected to one another.

Groenewegen teaches a plurality of band-pass filters each having an input for receiving separate, predetermined channel signals, i.e. a plurality of channel filters (Fig. 1, el. F1-Fj; Col. 4, lines 37-54), having each output of the plurality of band-pass filters directly connected to one another, i.e. individual TV signals are added together to form a broadband frequency-division multiplexed TV signal (Fig. 1, el. AD1; Col. 4, lines 37-54).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nicholson's channel group filters to have a plurality of channel filters each having an input for receiving separate, predetermined channel signals, and having each output of the plurality of band-pass filters directly connected to one another, as taught by Groenewegen, for the purpose of removing unwanted noise surrounding a channel frequency.

Regarding claim 2, Nicholson in view of Groenewegen teaches each of the band-pass filters within each of said first and second pluralities operates within a separate, predetermined frequency range, i.e. filtering a channel from a TV signal based on its frequency (Groenewegen-Col. 4, lines 37-54), and the frequency ranges are spaced from one another a sufficient amount to alleviate

interference between any two band-pass filters within a single plurality (Groenewegen-Col. 7, lines 25-42).

Regarding claim 3, Nicholson in view of Groenewegen teaches one band-pass filter within said first plurality operates within the same frequency range as that of one band-pass filter within said second plurality, i.e. C channel group from SCC-1 and C channel group from SCC-2 (Nicholson-Fig. 2; Groenewegen-Fig. 1, el. F1-Fj; Col. 4, lines 37-54).

Regarding claim 4, Nicholson in view of Groenewegen teaches each of said band-pass filters within said first plurality has a corresponding band-pass filter within said second plurality that operates within the same frequency range, Note: Examiner defines the first plurality of band-pass filters to be the individual channel filters, as taught by Groenewegen (Fig. 1, el. F1-Fj; Col. 4, lines 37-54), of Group C of SCC-1 (Nicholson-Fig. 2) and the second plurality to be the individual channel filters of Group C of SCC-2, (Nicholson-Fig. 2).

Regarding claim 5, Nicholson in view of Groenewegen teaches one band-pass filter within said first plurality operates within a frequency range that falls between the operating frequency ranges of two frequency-adjacent band-pass filters within said second plurality, i.e. Group C of SCC-1 falls within Groups A

and D of SCC-2 (Nicholson-Fig. 2; Groenewegen-Fig. 1, el. F1-Fj; Col. 4, lines 37-54).

Regarding claim 6, Nicholson in view of Groenewegen teaches a plurality of band-pass filters within said first plurality operate within frequency ranges that are outside the operating frequency ranges of the band-pass filters within said second plurality, i.e. individual channel filters of Group C of SCC-1 are outside the frequency range of Groups A, B, and D of SCC-3, where SCC-3 is defined as the second plurality (Nicholson-Fig. 2; Groenewegen-Fig. 1, el. F1-Fj; Col. 4, lines 37-54).

Regarding claim 7, Nicholson in view of Groenewegen teaches filtering a channel, with a separate predetermined frequency range, from a TV signal based on its frequency, (Nicholson-Col. 6, lines 25-39; Groenewegen-Col. 4, lines 37-54; Col. 6, lines 1-31), and each channel is separated by a fixed frequency spacing (Groenewegen-Col. 6, lines 1-31).

Official Notice is taken that it is well-known in the art to have a band-pass filter operate in a particular frequency range and to separate adjacent band-pass filters by a frequency range. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nicholson in view of Groenewegen to have each channel filter comprise a filtering bandwidth in a range of 20 MHz to 100 MHz and to have the spacing between adjacent

frequency ranges within a single plurality range from 20 MHz to 100 MHz for the purpose of removing unwanted noise surrounding a channel frequency.

Regarding claim 8, Nicholson in view of Groenewegen teaches filtering a channel, with a separate predetermined frequency range, from a TV signal based on its frequency, (Nicholson-Col. 6, lines 25-39; Groenewegen-Col. 4, lines 37-54; Col. 6, lines 1-31), and each channel is separated by a fixed frequency spacing (Groenewegen-Col. 6, lines 1-31).

Official Notice is taken that it is well-known in the art to have a band-pass filter operate in a particular frequency range and to separate adjacent band-pass filters by a frequency range. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nicholson in view of Groenewegen to have each channel filter comprise a filtering bandwidth in a range of 30 MHz to 70 MHz and to have the spacing between adjacent frequency ranges within a single plurality range from 30 MHz to 70 MHz for the purpose of removing unwanted noise surrounding a channel frequency.

3. Claims 9-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nicholson in view of Groenewegen and further in view of Nosu (US 4,244,045).

Regarding claim 9, claim is analyzed with respect to claim 1, wherein the first and second modules of claim 9 are the first and second plurality of band-pass filters, respectively, of claim 1.

Nicholson teaches at least one third module comprising a plurality of band-pass filters each having an input for receiving a separate, predetermined group of channel signals, (Fig. 2, el. 87, 91), and an output (Col. 6, lines 25-39).

Nicholson does not clearly teach a plurality of band-pass filters, arranged on a substrate, each having an input for receiving separate, predetermined channel signals, and having each output of the plurality of band-pass filters directly connected to one another.

Groenewegen teaches a plurality of band-pass filters each having an input for receiving separate, predetermined channel signals, i.e. a plurality of channel filters (Fig. 1, el. F1-Fj; Col. 4, lines 37-54), having each output of the plurality of band-pass filters directly connected to one another, i.e. individual TV signals are added together to form a broadband frequency-division multiplexed TV signal (Fig. 1, el. AD1; Col. 4, lines 37-54).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nicholson's channel group filters to have a plurality of channel filters each having an input for receiving separate, predetermined channel signals, and having each output of the plurality of band-pass filters directly connected to one another, as taught by Groenewegen, for the purpose of removing unwanted noise surrounding a channel frequency.

Groenewegen does not clearly teach arranging the plurality of band-pass filters on a substrate.

Nosu teaches arranging the plurality of band-pass filters on a substrate (Fig. 12, el. 60, 11, 12, 13, 14, 15, 16; Col. 6, lines 47-54).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nicholson in view of Groenewegen to have the channel filters be on a substrate, as taught by Nosu, for the purpose of avoiding problems with a computerized filtering process.

Regarding claim 10, claim is analyzed with respect to the combination of claims 2 and 9.

Regarding claim 11, claim is analyzed with respect to the combination of claims 3 and 9.

Regarding claim 12, claim is analyzed with respect to the combination of claims 3 and 9.

Regarding claim 13, claim is analyzed with respect to the combination of claims 3 and 9.

Regarding claim 14, Nicholson in view of Groenewegen teaches filtering a channel, with a separate predetermined frequency range, from a TV signal based on its frequency, (Nicholson-Col. 6, lines 25-39; Groenewegen-Col. 4, lines 37-

54; Col. 6, lines 1-31), and each channel is separated by a fixed frequency spacing (Groenewegen-Col. 6, lines 1-31).

Official Notice is taken that it is well-known in the art to have a band-pass filter operate in a particular frequency range and to separate adjacent band-pass filters by a frequency range. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nicholson in view of Groenewegen to have each channel filter comprise a filtering bandwidth in a range of 20 MHz to 100 MHz and to have the spacing between adjacent frequency ranges for said band-pass filters on each of said first module, said second module, and said third module ranges from 20 MHz to 120 MHz for the purpose of removing unwanted noise surrounding a channel frequency.

Regarding claim 15, Nicholson in view of Groenewegen teaches filtering a channel, with a separate predetermined frequency range, from a TV signal based on its frequency, (Nicholson-Col. 6, lines 25-39; Groenewegen-Col. 4, lines 37-54; Col. 6, lines 1-31), and each channel is separated by a fixed frequency spacing (Groenewegen-Col. 6, lines 1-31).

Official Notice is taken that it is well-known in the art to have a band-pass filter operate in a particular frequency range and to separate adjacent band-pass filters by a frequency range. Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nicholson in view of Groenewegen to have each channel filter comprise a filtering bandwidth

in a range of 30 MHz to 70 MHz and to have the spacing between adjacent frequency ranges within a single plurality range from 50 MHz to 120 MHz for the purpose of removing unwanted noise surrounding a channel frequency.

Regarding claim 16, Nicholson in view of Groenewegen teaches a sufficient number of said first modules such that each CATV channel that operates within said separate, predetermined frequency range for each of said band-pass filters of said first module is individually filtered through a separate first module, i.e. channels are individually filtered in groups in the combination of Nicholson (Fig. 2, el. 87, 91) and Groenewegen (Fig. 1, el. F1-Fj; Col. 4, lines 37-54);

a sufficient number of said second modules such that each CATV channel that operates within said separate, predetermined frequency range for each of said band-pass filters of said second module is individually filtered through a separate second module, i.e. channels are individually filtered in groups in the combination of Nicholson (Fig. 2, el. 87, 91) and Groenewegen (Fig. 1, el. F1-Fj; Col. 4, lines 37-54); and

a sufficient number of said third modules such that each CATV channel that operates within said separate, predetermined frequency range for each of said band-pass filters of said third module is individually filtered through a separate third module, i.e. channels are individually filtered in groups in the

combination of Nicholson (Fig. 2, el. 87, 91) and Groenewegen (Fig. 1, el. F1-Fj; Col. 4, lines 37-54);

such that the combined signal from said output of said combiner includes all of the individually filtered CATV channel signals provided within the frequency ranges of each of said band-pass filters of each of said first, second and third modules, i.e. individual TV signals are added together to form a broadband frequency-division multiplexed TV signal (Fig. 1, el. AD1; Col. 4, lines 37-54).

Regarding claim 17, Nicholson in view of Groenewegen teaches at least one housing, said housing containing said first modules, said second modules, said third modules and said combiner, Note: the apparatus is found at the head-end and therefore, the first, second, and third modules are housed at the head-end (Nicholson-Col. 6, lines 25-49).

Regarding claim 18, claim is analyzed with respect to the combination of claims 9 and 16.

Regarding claim 19, claim is analyzed with respect to the combination of claims 2 and 9.

Regarding claim 20, claim is analyzed with respect to the combination of claims 3 and 9.

Regarding claim 21, claim is analyzed with respect to the combination of claims 3 and 9.

Regarding claim 22, claim is analyzed with respect to the combination of claims 3 and 9.

Regarding claim 23, claim is analyzed with respect to claim 14.

Regarding claim 24, claim is analyzed with respect to claim 15.

Regarding claim 25, claim is analyzed with respect to claim 16.

Regarding claim 26, claim is analyzed with respect to claim 17.

Regarding claim 27, claim is analyzed with respect to the combination of claims 9 and 10.

Regarding claim 28, Nicholson in view of Groenewegen teaches each of said band-pass filters are aligned to extend from a respective one of said individual inputs toward said common node in a substantially linear manner (Nicholson-Fig. 3, el 87, 9; Groenewegen-Fig. 1, el. F1, F2, Fj, AD1).

Nicholson in view of Groenewegen does not clearly teach each of said band-pass filters comprise a plurality of discrete electronic components.

Nosu teaches each of a plurality of band-pass filters comprise a plurality of discrete electronic components (Fig. 12, el. 11, 12, 13, 14, 15, 16; Col. 6, lines 28-67).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Nicholson in view of Groenewegen's filters to have a plurality of discrete electronic components, as taught by Nosu, for the purpose of avoiding problems with a computerized filtering process.

Regarding claim 29, Nicholson in view of Groenewegen in view of Nosu teaches a first angle is defined by adjacent first, (Nosu-Fig. 12, el. 11, 12), and second, (Nosu-Fig. 12, el. 13, 14), band-pass filters, and a second angle is defined by adjacent second and third band-pass filters (Nosu-Fig. 12, el. 15, 16; Col. 6, lines 47-54), Note: the filters are placed side-by-side onto a substrate (Nosu-Fig. 12, el 60), thus the angles are formed.

Regarding claim 30, Nicholson in view of Groenewegen in view of Nosu teaches the first angle is substantially equal to said second angle (Nosu-Fig. 12, el. 11, 12, 13, 14, 15, 16; Col. 6, lines 47-54).

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Regarding claim 31, claim is analyzed with respect to the combination of claims 9 and 10.

Regarding claim 32, claim is analyzed with respect to claim 14.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JEREMY DUFFIELD whose telephone number is (571)270-1643. The examiner can normally be reached on Mon.-Thurs. 8:00 A.M.-5:30 P.M. EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Scott Beliveau can be reached on (571) 272-7343. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 2623

26 February 2008
JSD



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PRIMARY PATENT EXAMINER